

MEDICAL GAS AND VACUUM DISTRIBUTION
10 BED ISOMETRIC RISER DIAGRAM
SCALE: NONE

(THIS DRAWING ONLY)

- 1 PROVIDE AND INSTALL TWO NEW LOCKABLE FULL PORT, DOUBLE SEAL, BALL—TYPE, QUARTER TURN, THREE PIECE VALVES. SOURCE VALVE SHALL BE LOCKED OPEN, TYPICAL.
- 2 PROVIDE AND INSTALL NEW PRESSURE AND VACUUM TRANSDUCER SWITCH ON MEDICAL AIR, OXYGEN, AND MEDICAL VACUUM PIPING FOR AREA ALARM SYSTEM. LOW PRESSURE LIMIT TO BE SET BY INSTALLER.
- (3) PROVIDE AND INSTALL PRESSURE GAGE.
- 4 PROVIDE AND INSTALL VACUUM GAGE.
- 5 PROVIDE AND INSTALL NEW AREA ALARM PANEL "A" AT APPROXIMATE LOCATION INDICATED. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR HEIGHT. REFER TO SCHEDULE ON PLUMBING DRAWING PP502.
- 6 PROVIDE AND INSTALL NEW TRIPLE ZONE VALVE AND RECESSED BOX ASSEMBLY; MEDICAL AIR, OXYGEN, AND MEDICAL VACUUM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR HEIGHT.
- (7) MEDICAL AIR, OXYGEN, AND MEDICAL VACUUM DROP TO INLET/OUTLET.
- 8 OXYGEN MANIFOLD.
- 9 ROUTE PIPING DOWN TO DUPLEX MEDICAL VACUUM PUMP (VP-1) SYSTEM. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS.
- (10) CONNECT TO DUPLEX MEDICAL AIR COMPRESSOR (AC-1) SYSTEM. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS.
- 11) PROVIDE AND INSTALL NEW MASTER ALARM PANEL AT APPROXIMATE LOCATION INDICATED. REFER TO MANUFACTURER'S RECOMMENDATIONS

FOR HEIGHT. REFER TO SCHEDULE ON PLUMBING DRAWING PP502.

(12) CONNECT TO HOSPITAL MASTER ALARM PANEL.

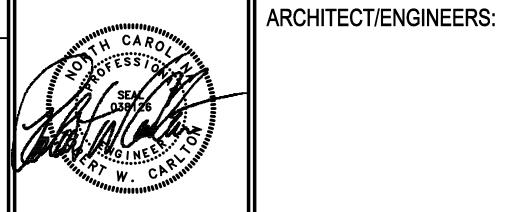
FINAL SUBMITTAL

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MEDICAL GAS AND VACUUM
DISTRIBUTION
10 -BED ISOMETRIC RISER DIAGRAM

Approved: Project Director

Drawing Title:
MEDICAL GAS AND VACUUM
DISTRIBUTION
Local
Local
Local

FAYETTEVILLE CLC
PROJECT ONE

Location: FAYETTEVILLE, NC

CARLTON

February 5, 2015

565-131

Building Number:

Drawing Number:

OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT

Department Veterans A

		ı	FIXTU	re uni	T CAI	CUL	TION		FIXTURE UNIT CALCULATION											
		27/	DRAII	NAGE FU			DOMES	TIC WATE	ER FU											
MARK	FIXTURE	QTY		TOTAL FU	CW EA				TOTAL EA	TOTAL FU	REMARKS									
P-103	WATER CLOSET	10	4.00	40.00	6.00	60.00	_	_	6.00	60.00	FLUSH VALVE									
P-114	WATER CLOSET	1	4.00	4.00	6.00	6.00	_	_	6.00	6.00	FLUSH VALVE									
P-420	LAVATORY	1	1.00	1.00	0.50	0.50	0.50	0.50	0.70	0.70	WALL HUNG									
P-430	LAVATORY	11	1.00	11.00	0.50	5.50	0.50	5.50	0.70	7.70	WALL HUNG									
P-502	SERVICE SINK	1	2.00	2.00	3.00	3.00	3.00	3.00	4.00	4.00	FLOOR MNTD									
P-505	CLINIC SERVICE SINK	1	5.00	5.00	3.00	3.00	3.00	3.00	4.00	4.00	FLUSHING RIM									
P-521	LAUNDRY TUB	1	2.00	2.00	3.00	3.00	3.00	3.00	1.40	1.40	SINGLE BOWL									
P-524	SINK, CRS	1	2.00	2.00	1.00	1.00	1.00	1.00	1.40	1.40	DOUBLE BOWL									
P-604	ELECTRIC WATER COOLER	1	0.50	0.50	0.50	0.50	_	_	0.50	0.50	DUAL HEIGHT									
P-704	SHOWER	10	2.00	20.00	1.50	15.00	1.50	15.0	1.70	17.00	DUAL HEAD									
P-801	WALL HYDRANT	4		_	0.75	3.00			0.75	3.00										
P-802	COMBINATION FAUCET	1	_	_	0.75	0.75	0.75	0.75	1.40	1.40										
P-804	HOSE BIBB	12	_	_	0.75	9.00			0.75	9.00										
P-808	WASHING MACHINE BOX	1	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00										
P-812	ICE MAKER BOX	1	_	_	0.50	0.50		'	0.50	0.50										
-	SODA FOUNTAIN	1	_	_	0.50	0.50		'	0.50	0.50										
FD-B	FLOOR DRAIN	1	2.50	2.50				'												
FD-C	FLOOR DRAIN	11	2.50	27.50	'			'			SHOWER									
FD-M	FLOOR DRAIN	1	2.50	2.50	_			'	_	_	MECHANICAL									
				123.00		114.25		35.75		121.10										
GPM				12	21.10 W	SFU =	77.0 G'	PM + C	GPM MAK	(E UP WAT	TER = 77.0 GPM									
PIPE SIZE	.E	6" S/	NITARY	DRAINAGE				2-1/	'2" DOMEST	IC WATER										

	DOMESTIC WATER CALCULATIONS											
SIZE		PM	FIXTURE UNITS DCWS	FIXTURE UNITS DHWS								
	DCWS	DHWS										
1/2"	3	3	_	1								
3/4"	12	7	-	8								
1"	22	13	8	24								
1-1/4"	32	20	10	34								
1-1/2"	45	27	17	60								
2"	75	50	90	185								
2-1/2"	120	75	300	348								
3"	143	120	500	400								

- 1. FIXTURE UNIT VALUES BASED ON 2012 NORTH CAROLINA PLUMBING CODE AND VA PLUMBING CLC DESIGN GUIDE SIZING CHARTS.
- 2. MAX VELOCITY FOR HOT WATER 5 FT/SEC, FOR COLD WATER 6 FT/SECOND.

FLOOR DRAIN SCHEDULE										
LOCATION	TYPE	SIZE	SEWER	REMARKS						
DOMICILIARY										
SHOWER, SINGLE TOILET ROOM	C/D	3"	S							
LAUNDRY, HAC ROOM	E	4"	S							
MECHANICAL EQUIPMENT AREA										
MECHANICAL ROOM	В	4"	S							

### **LEGEND:** TYPES:

- S = SANITARY SEWER
  - C = FINISHED AREAS
- ST = STORM SEWER
- D = LATEX MASTIC FLOOR/THIN SET TILE

- 1. REFER TO PLANS FOR LOCATION OF FLOOR DRAIN.
- 2. WITH 1/2 GRATE WHEN ADJACENT TO EQUIPMENT

	THER	RMOSTATI	C TYPE	PRESSUF	RE BALAN	NCE MIXI	NG VALV	E SCHEDULE	
MARK	PIPING		PRESSURE	CAPACITY	-	<b>TEMPERATURE</b>		NOTES	
	INLET	OUTLET	DROP	GPM	COLD	HOT	TEMPERED	NOTES	
MV-1	3/4"	3/4"	5 PSI	48	50 <b>°</b> F	140 <b>°</b> F	130°F	1, 2 AND 3	

- 1. DESIGN BASIS: POWERS LFMM431-1 OR APPROVED EQUAL.
- 2. EXPOSED, ROUGH BRONZE FINISH, BOTTOM CONNECTIONS.
- 3. MINIMUM FLOW SHALL BE 0.5 GPM.

	RECIRCULATING PUMP SCHEDULE										
MARK	TYPE	MOTOR H.P.	VOLTAGE/PHASE	DISCHARGE PRESSURE (DESIGN)	FLOW (DESIGN)	SPEED	LOCATION				
RP-1	IN-LINE	1/12	RE: ELECTRICAL	8 FT. HD.	3 GPM	1750 RPM	MECHANICAL ROOM				

- 1. BASIS OF DESIGN: BELL AND GOSSETT OR EQUAL MODEL SERIES 100 WITH 3/4" FLANGE AND ISOLATION CONTROL
- 2. PUMP AND MOTOR SHALL BE LISTED BY A NATIONAL TESTING LABORATORY.
- 3. REFER TO WATER HEATER DETAIL ON SHEET PP601.

SHOCK ABSORBER SCHEDULE											
ABSORBOTRON TYPE NO.	5005	5010	5020	5030	5040	5050					
P.D.I. SYMBOLS	A	В	С	D	E	F					
FIXTURE UNIT RATING	1–11	12-32	33-60	61–113	114-154	155-330					

1. J.R. SMITH MODEL NUMBERS SHOWN, EQUAL — JOSAM OR ZURN.

## DFU DCWS WSFU DHWS TOTAL WASTE PIPE SIZE SIZE SIZE CW SUPPLY SUPPLY PIPE SIZE SIZE SIZE REMARKS MARK FIXTURE P-103 | WATER CLOSET 4.0 | 6.0 | - | 6.0 | 4.00 | 2.00 | 1.25 P-114 WATER CLOSET 4.0 | 6.0 | - | 6.0 | 4.00 | 2.00 | 1.25 P-420 LAVATORY 1.0 | 0.5 | 0.5 | 0.7 | 1.50 | 1.50 | 0.50 | 0.50 | 3 AND 7 1.0 | 0.5 | 0.5 | 0.7 | 1.50 | 1.50 | 0.50 | 0.50 | 7 AND 8 P-430 LAVATORY P-502 | SERVICE SINK 2.0 | 3.0 | 3.0 | 4.0 | 3.00 | 1.50 | 1.00 | 1.00 P-505 | CLINIC SERVICE SINK 5.0 | 3.0 | 3.0 | 4.0 | 4.00 | 2.00 | 1.00 | 1.00 P-521 | LAUNDRY TUB 2.0 3.0 3.0 4.0 1.50 1.50 0.75 0.75 3.0 | 1.5 | 1.5 | 2.0 | 1.50 | 1.50 | 0.75 | 0.75 P-524 SINK, CRS P-604 | ELECTRIC WATER COOLER | 0.5 | 0.5 - 0.5 1.50 1.50 0.50 P-704 SHOWER 2.0 | 1.5 | 1.5 | 2.0 | 2.00 | 1.50 | 0.75 | 0.75 | 5, 6, AND 7 0.75 0.75 P-802 | COMBINATION FAUCET P-804 | Hose bibb P-808 WASHING MACHINE BOX 3.0 3.0 4.0 4.0 2.00 1.50 0.75 0.75 P-812 | ICE MAKER BOX 0.5 - 0.5

PLUMBING FIXTURE SCHEDULE

- 1. WALL HUNG, VITREOUS CHINA, FLUSH VALVE. 1.28 GPF MAXIMUM.
- 2. FLOOR MOUNTED, BARIATRIC, COATED WHITE, FLUSH VALVE. 1.28 GPF MAXIMUM.
- 3. WALL HUNG, VITREOUS CHINA, SINGLE LEVER CONTROL. 0.35 GPM MAXIMUM LAMINAR FLOW
- 4. SELF-CONTAINED BUBBLER STYLE FULLY EXPOSED DUAL HEIGHT STAINLESS STEEL FOUNTAIN.
- 5. MOUNT PRESSURE BALANCING MIXING VALVE AT 32" ABOVE FINISHED FLOOR AND DIVERTER VALVE AT 40" ABOVE FINISHED FLOOR.
- MOUNT WALL MOUNTED SHOWERHEAD CONNECTED TO ARM AT 77" ABOVE FINISHED FLOOR AND SPRAYER HEAD ASSEMBLY ON 5'-0" FLEXIBLE HOSE ON 24-INCH SLIDE BAR. SHOWERHEAD 1.5 GPM MAXIMUM.
- HANDICAPPED FIXTURE. FIXTURE SHALL MEET THE AMERICAN WITH DISABILITIES ACT AND BARRIER-FREE HEALTH CARE INITIATIVE REQUIREMENTS.
- 8. WALL HUNG, QUARTZ SURFACE, HANDS FREE CONTROL, 0.35 GPM MAXIMUM LAMINAR FLOW

DOMESTIC ELECTRIC WATER HEATER SCHEDULE											
MARK	STORAGE (GAL)	RECOVERY AT 90°F RISE	TYPE	INPUT KW	ELECTRICAL REQUIREMENTS	LOCATION					
WH-1	100	109 GPH	STORAGE	24	refer to note 1	MECHANICAL ROOM					
WH-2	100	109 GPH	STORAGE	24	REFER TO NOTE 1	MECHANICAL ROOM					

- 1. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS NOT SHOWN.
- 2. DUPLEX HEATERS- REFER TO WATER HEATER DETAIL ON SHEET PP601 AND MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
- 3. BASIS OF DESIGN: LOCHINVAR CH SERIES COMPACT ASME HI-POWER COMMERCIAL ELECTRIC WATER HEATERS OR APPROVED EQUAL.

	EXPANSION TANK SCHEDULE										
MARK	CAPACITY	MAXIMUM ACCEPTANCE VOLUME	CONNECTION SIZE	DIMENSIONS DIAMETER HEIGHT		WEIGHT	LOCATION				
ET- 1	2.1-GALLON	1.0-GALLONS	3/4"	8.0"	8.0" 11.6"		MECHANICAL H144				

# **NOTES:**

- 1. DESIGN BASES; MANUFACTURE: FLEXCON, MODEL: PH-5.
- 2. REFER TO MANUFACTURER LITERATURE FOR INSTALLATION OF EXPANSION TANK AND SPECIFICATIONS FOR MANUFACTURER.

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ARCHITECT/ENGINEERS:



**SCHEDULES - PLUMBING** approved: Project Director

565-131 FAYETTEVILLE CLC PROJECT ONE rawing Number: FAYETTEVILLE, NC

OFFICE OF CONSTRUCTION AND FACILITIES **MANAGEMENT** 

FINAL SUBMITTAL

CARLTON

MEDICAL GAS ALARM PANEL SCHEDULE GAGES SERVICE INDICATOR LIGHTS LOCATION PANEL NO LIQUID OXYGEN LEVEL LOW **ADMINISTRATION** SPACE H103 (SYSTEM) OXYGEN RESERVE SWITCHOVER OXYGEN RESERVE IN USE OXYGEN RESERVE LOW LIQUID LEVEL OXYGEN RESERVE LOW PRESSURE OXYGEN LINE PRESSURE LOW OXYGEN LINE PRESSURE HIGH MEDICAL AIR DEWPOINT HIGH MEDICAL AIR COMPRESSOR MALFUNCTION MEDICAL AIR PRESSURE LOW MEDICAL AIR PRESSURE HIGH MA SYSTEM CARBON MONOXIDE HIGH DESICCANT DRYER MALFUNCTION DESICCANT DRYER POST FILTER DIRTY DESICCANT DRYER INLET FILTER DIRTY MAIN LINE FILTER BANK DIRTY MEDICAL AIR REFRIGERATED DRYER POST FILTER DIRTY AFTER COOLER HIGH AIR TEMPERATURE MEDICAL VACUUM LINE VACUUM LOW MEDICAL VACUUM FILTER BACK PRESSURE TEST BUTTON PATIENT AREAS YES | MEDICAL AIR LINE PRESSURE ABNORMAL. OXYGEN LINE PRESSURE ABNORMAL. MEDICAL VACUUM LINE VACUUM LOW. TEST BUTTON. PANEL "A" SILENCE BUTTON.

- MEDICAL GAS ALARM PANEL "A" TO BE LOCATED IN NURSE STATION, ON WALL AS INDICATED ON
- 2. CONNECT MEDICAL GAS ALARM PANEL "A" TO MASTER ALARM PANEL. PROVIDE ALL NECESSARY CONDUIT, CONNECTORS, AND CONDUCTORS FOR COMPLETE AND OPERABLE LEVEL 3 ALARM SYSTEM PER NFPA 99. REFER TO ELECTRICAL DRAWINGS.
- CONNECT ALL MEDICAL GAS EQUIPMENT LOCAL ALARMS TO MASTER ALARM PANEL. PROVIDE ALL NECESSARY CONDUIT, CONNECTORS, AND CONDUCTORS FOR COMPLETE AND OPERABLE LEVEL 3 ALARM SYSTEM PER NFPA 99. COORDINATE WITH ELECTRICAL CONTRACTOR.
- 4. PROVIDE ALL NECESSARY EQUIPMENT TO CONNECT TO THE HOSPITAL MASTER ALARM PANEL.

	AIR COMPRESSOR SCHEDULE											
MARK	TYPE	RECEIVER SIZE	ICFM @ 50 PSIG	SCFM @ 50 PSIG	MOTOR H.P.	VOLTAGE	BTU/HR	DISCHARGE				
C-1	MEDICAL SCROLL	80 GAL	6.8	6.0	(2)2	_	5,090	50 PSIG				

- 1. AC-1: MEDICAL AIR COMPRESSOR PACKAGE SHALL BE DUPLEX OIL-LESS SCROLL MEDICAL AIR COMPRESSOR WITH 80 GALLON VERTICAL ASME TANK, DUPLEX PLC PANEL WITH PBMI, DESICCANT DRYER PACKAGE, CARBON MONOXIDE AND DEW POINT MONITORS, LOCAL ALARM AND REMOTE ALARM MONITOR CAPABILITIES.
- 2. PROVIDE FILTERS, INTAKE AIR PIPING, AND VIBRATION ISOLATORS AS RECOMMENDED BY MANUFACTURER.
- 3. ALL AIR COMPRESSOR SYSTEMS SHALL COMPLY WITH NFPA 99.
- 4. ICFM AND SCFM VALUES @ 50 PSIG ARE SHOWN WITH ONE COMPRESSOR IN RESERVE.
- 5. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL ELECTRICAL INFORMATION.
- 6. BASIS OF DESIGN: MANUFACTURER: POWEREX MEDICAL SCROLL SKID MOUNT PACKAGE DUPLEX WITH PREMIUM CONTROLS; MODEL: MSD0203 OR APPROVED EQUAL.

VACUUM PUMP SCHEDULE										
MARK	TYPE	SCFM © 19"Hg	SYSTEM CAPACITY	RECEIVER SIZE	MOTOR H.P.	VOLTAGE	PHASE/Hz	LOCATION		
VP-1	MEDICAL	7	7	80 GAL	(2)1.5	-	3,818	MECHANICAL ROOM		

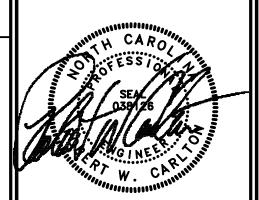
- 1. VP-1: MEDICAL VACUUM PACKAGE SHALL BE DUPLEX OIL-LESS CLAW MEDICAL VACUUM PUMP SYSTEM; WITH 80 GALLON ASME TANK, DUPLEX PLC CONTROL PANEL WITH PBMI, AND HIGH TEMPERATURE SWITCHES
- PROVIDE FILTERS, SILENCERS, EXHAUST PIPING, SEPARATORS, AND/OR MUFFLERS AND VIBRATION ISOLATORS AS RECOMMENDED BY MANUFACTURER TO REDUCE NOISE.
- 3. ALL VACUUM PUMPS SHALL COMPLY WITH NFPA 99.
- 4. SYSTEM CAPACITY IS INDICATED WITH ONE PUMP IN RESERVE.
- 5. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL ELECTRICAL INFORMATION.
- 6. BASIS OF DESIGN: MANUFACTURER: POWEREX LUBRICATED VANE MEDICAL VACUUM SYSTEM SKID MOUNT PACKAGE - DUPLEX WITH PREMIUM NFPA CONTROLS; MODEL: VVTD0153 OR APPROVED EQUAL.

	MANIFOLD SCHEDULE										
MARK	TYPE	NO. OF CYLINDERS	GAS	DELIVERY PRESSURE	ALARM	VOLTAGE	PHASE/Hz	LOCATION			
MF-1	AUTOMATIC	4X4	OXYGEN	55 PSIG	EMBEDDED	115V	1ø/60	MEDICAL GAS ROOM			

1. OXYGEN MANIFOLD PACKAGE SHALL HAVE CYLINDERS EQUALLY DIVIDED INTO TWO BANKS OF CYLINDERS ARRANGED IN STAGGERED CONFIGURATION WITH AUTOMATIC SWITCHOVER AND PROVIDE AN UNINTERRUPTED SUPPLY OF GAS. SERVICE VALVES, REGULATOR, AND SOLENOID VALVE, 1/4 TURN SHUTOFF VALVE TO ISOLATE MANIFOLD, CONTROL PANEL WITH ETHERNET CONNECTIVITY.

- 2. ALL AIR MANIFOLDS SHALL COMPLY WITH NFPA 99.
- 3. BASIS OF DESIGN: MANUFACTURER: AMICO AUTOMATIC MEDICAL GAS DOME LOADED MANIFOLD; MODEL M3D-DL-HH-U-OXY WITH AMICO HEADER BAR ASSEMBLY; MODEL M2-HBTS-08L-OXY OR APPROVED EQUAL.
- 4. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL ELECTRICAL INFORMATION.

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ARCHITECT/ENGINEERS:



MEDICAL GAS AND VACUUM SCHEDULES - PLUMBING approved: Project Director

FAYETTEVILLE CLC PROJECT ONE

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CARLTON

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**MANAGEMENT** 

PP502

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